

Customer No. 25280

Case No. 2130

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CENTRAL FAX CENTER
JUL 07 200635 USC Section 103 Rejections:

Claims 29-31, 33-41 and 43-48 were rejected under 35 U.S.C. 103(a) as being unpatentable over Yokozeki et al. (USPN 5,981,063) in view of Ghosh (USPN 6,149,927).

Examiner's Arguments

With respect to claim 29, the Examiner submits that Yokozeki et al. teach the claimed invention except for a binder material that is selected from the group consisting of melamine formaldehyde resins, acrylic resins, permanent press resins, pvc/vinyl chloride copolymers, ethoxylated polyester, and mixtures thereof.

The Examiner states that Ghosh is directed to biocidal compositions (Abstract) and teaches that nets (col. 7, lines 5-7) can be used in conjunction with a biocide and binder. In particular, Ghosh identifies conventional binders suitable for binding a biocidal composition to a fiber net as polyvinyl chloride and acrylic resins (col. 7, lines 18-28). Since both Ghosh and Yokozeki et al. recognize the utility of employing a binder for the purpose of affixing a biocidal composition to a fiber substrate, the Examiner believes it would have been obvious to one of ordinary skill to have used a binder made of pvc or acrylic resin with the biocide composition disclosed by Yokozeki et al.

With respect to claim 29, the Examiner further states that although the references do not explicitly teach that at least one portion of said treated substrate retains at least 50% of said adhered finish after 10 washes as performed in accordance with the wash procedure of ATCC Test Method 130-1981, said limitations are expected from the combined disclosure of Yokozeki et al. and Ghosh. Support for said presumption is found in the use of similar materials (i.e. a substrate coated with a metal ion generating compound and binder) and in the similar production steps (i.e. a substrate, a metal ion generating compound, and binder) used to produce the treated substrate.

In response to Applicants arguments that the prior art does not teach the problem solved by the instantly claimed invention (Response dated 1/18/06), the Examiner asserts that the fact Applicants have recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. As such, the Examiner maintains the claim rejection.

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Applicants' Arguments

I. Applicants respectfully contend that the rejection of claims 29-31, 33-41 and 43-48 lacks a showing of *prima facie* obviousness because the prior art fails to teach the problem or the source of the problem solved by the claimed invention. *In re Peehs*, 612 F.2d 1287, 204 USPQ 835 (CCPA 1980). In *Peehs*, the court held that to establish a *prima facie* case of obviousness where the advance in the art lies in the discovery of the problem or the source of the problem, the examiner would have to provide evidence that a person of ordinary skill in the art at the time of the invention would have expected a problem to exist. Furthermore, *In re Nomiya*, 509 F.2d 566, 572, 184 USPQ 607, 612 (CCPA 1975) stated, "Where there is no evidence of record that a person of ordinary skill in the art at the time of [an applicant's] invention would have expected [a problem],...it is not proper to conclude that [an invention], which solves this problem... would have been obvious to that hypothetical person of ordinary skill in the art. The significance of evidence that a problem was known in the prior art is, of course, that knowledge of a problem provides a reason or motivation for workers in the art to apply their skill to its solution."

Applicants respectfully disagree with the Examiner's position that Applicants have recognized another advantage which would flow naturally from following the suggestion of the prior art (Final Office Action dated 4/7/06, page 2). Applicants respectfully submit that there is no suggestion provided by the prior art which would result in Applicants' claimed invention, as will be discussed in detail below.

Applicants' invention is directed to a substrate having a finish applied to the surface of the substrate, wherein said finish is durable to standard wash procedures. Applicants claim the feature of durability by the following limitation in claim 29:

"...wherein said finish is adhered to at least one portion of the surface of said substrate; wherein said at least one portion of said treated substrate retains at least about 50% of said finish after 10 washes as performed in accordance with the wash procedure of AATCC Test Method 130-1981;"

With regard to the problem solved by Applicants' claimed invention, Applicants' specification states (page 1, first paragraph):

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"This invention relates to improvements in durable non-conductive metal-based treatments (such as coatings or finishes) for yarns and textile fabrics."

"The treatment is extremely durable on such substrates; after a substantial number of standard launderings and dryings, the treatment does not wear away in any appreciable amount and thus the substrate retains its antimicrobial activity (or other property). The method of adherence to the target yarn and/or fabric may be performed any number of ways, most preferably through the utilization of a binder system..."

Applicants' specification also states (bottom of page 4):

"It is thus an object of the invention to provide a simple manner of effectively treating a yarn, textile, or film with a wash-durable antimicrobial metal or metal-ion containing treatment."

Applicants have also provided many examples which illustrate the durability of the finish on a treated substrate in Tables 1, 2 and 3 of the specification.

Thus, one can clearly see that Applicants have found a solution to the problem of providing a substrate having a durable finish comprised of metal compounds wherein said finish is applied to the surface of the substrate and the treated substrate can withstand multiple laundering cycles. That is, Applicants have provided a treated substrate having a finish comprised of solid metal compounds plus specific binder materials, wherein the finish is applied to the surface of the substrate and the finish is durable to multiple laundering cycles.

In contrast, Applicants respectfully submit that the combination of references fail to teach the problem solved by Applicants' claimed invention. More specifically, the combination of references fail to recognize the problem of providing a substrate having a metal-containing finish which is durable to multiple laundering cycles.

Rather, Yokozeki et al. teach the solution to a different problem. Yokozeki et al. state (col. 1, lines 43-56):

"...the present inventors have made an extensive study out to find out a method capable of sufficiently utilizing the excellent properties of pyroelectric minerals or amplifying the

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properties without using a pyroelectric mineral (which is expensive) in a large amount. As a result, the present inventors found out that when a pyroelectric substance (e.g. a pyroelectric mineral) is used in combination with a particular metal ion, the above-mentioned unique properties of the pyroelectric mineral are amplified; the amount of pyroelectric substance used can be reduced; and the pyroelectric substance, even when used in a reduced amount, can show, by stimulation of pressure points, sufficiently high effects in acceleration the blood circulation, promotion of metabolism..."

Thus, Yokozeki et al. is directed to finding a solution to the problem of providing a composition which can provide the desirable effects of increased blood circulation, etc., but that contains less of the pyroelectric material due to its high cost. The solution is found, at least partly, by combining a metal ion with the pyroelectric material.

Looking at the Ghosh reference, Ghosh states (col. 1, line 66 to col. 2, line 3):

"The problem addressed by the present invention is to provide solid compositions of biocidal compounds that are safer to handle and provide controlled release of biocidal compounds once the composition is added to a locus to be protected."

Ghosh further states:

"When the biocidal composition of the present invention is a marine antifouling agent, the compositions of the present invention can be used to inhibit the growth of marine organisms by application of the compositions onto or into a marine structure." (col 6, lines 19-23).

"Suitable structures includes, but are not limited to: boats, ships, oil platforms, piers, pilings, docks, elastomeric rubbers, and fish nets." (col. 6, lines 29-31).

Thus, the Ghosh reference is directed to solid biocidal compositions which can be controllably released from treated marine structures.

Thus, Applicants respectfully submit that the combination of references does not teach the source of the problem solved by Applicants' claimed invention, wherein the source of the

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problem is providing a substrate having a finish which is durable to multiple laundering procedures. Applicants have solved this problem by adding a binder material selected from the group consisting of melamine-formaldehyde resins, acrylic resins, polyvinyl chloride/vinyl copolymers, and mixtures thereof to the metal-containing finish.

Accordingly, since the combination of references fails to teach the source of the problem solved by the claimed invention, Applicants respectfully contend that a *prima facie* showing of obviousness has not been established. Accordingly, Applicants respectfully submit that this rejection is improper and request that the rejection of claims 29-31, 33-41 and 43-48 be withdrawn.

II. Applicants further contend that there is no motivation provided by the Examiner to combine the Yokozeki reference with the Ghosh reference and then to modify the references accordingly to achieve Applicants claimed invention. As discussed previously, Yokozeki is directed to fibers containing pyroelectric substances (such as tourmaline) and a metal ion-holding inorganic particle which aid in ameliorating disease and improving blood circulation in the human body (Abstract and col. 1, lines 18-24). Ghosh is directed to organic biocidal compositions aimed at reducing the growth of marine organisms such as kelp, anemones, and molluscs (col. 2, lines 27-45 and col. 2, lines 52 to col. 4, line 39).

Applicants respectfully submit that one of ordinary skill in the art would not be motivated to combine the teachings of Yokozeki (tourmaline and metal ion-holding particles in or on fiber) with the teachings of Ghosh (organic biocides and pvc binders in a solvent based system or acrylic resins in solvent or aqueous based systems for application to marine equipment – col. 7, lines 18-28) to achieve Applicants' claimed invention. Applicants respectfully submit that the teaching by Ghosh that fishing nets may be coated with an organic biocide and a pvc or acrylic binder in combination with Yokozeki's teaching of fibers which contain tourmaline and silver or zinc, does not constitute adequate motivation for one of ordinary skill in the art to combine these references and achieve the instantly claimed invention – i.e., an antimicrobial finish for substrates such as yarns, fabrics, and films comprised of metal-containing compounds and specific binders (melamine formaldehyde resins, acrylic resins, permanent press resins, pvc/vinyl chloride copolymers, ethoxylated polyester, and combinations thereof) which is durable against repeated wash cycles when applied to yarn, fabric, or film and wherein the treated substrate is non-conductive.

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Without any motivation to combine these references, Applicants respectfully submit that this rejection is improper and request that the rejection of claims 29-31, 33-41 and 43-48 be withdrawn.

III. Applicants respectfully submit that the combination of references fails to teach each and every limitation of Applicants' claimed invention. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (MPEP § 2143.03).

Applicants respectfully submit that the combination of Yokozeki in view of Ghosh fails to teach the finish claimed by Applicants. Specifically, there is no teaching by the references of combining inorganic metal compounds with binder compounds to achieve a wash durable, topical coating for a yarn, a fabric, or a film. There is no teaching of the specific binders as claimed by Applicants, and there is no teaching of the use of zinc in combination with a hydrophilic and a hydrophobic binder compound as claimed by Applicants. There is no teaching that a substrate treated with Applicants' finish results in a treated substrate that is non-conductive. Furthermore, since all of the limitations of Applicants' claimed invention are not taught by the prior art, then one cannot assume that the wash durability, as recited by the instant claims, is inherent in the compositions taught by the prior art.

Accordingly, since the cited art fails to teach the limitations as claimed by Applicant in independent claim 29, and since all of the other rejected claims each depend directly or indirectly from this claim, Applicant respectfully submits that the obviousness rejection of claims 29 – 48 should not be maintained.

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Claims 32 and 42 were rejected under 35 U.S.C. 103(a) as being unpatentable over Yokozeki et al. (USPN 5,981,063) in view of Ghosh (USPN 6,149,927) and further in view of Sawan et al. (USPN 5,849,311).

Examiner's Arguments

The Examiner submits that while Yokozeki teaches the use of fibers as a substrate, no disclosure is provided to teach the use of a film substrate and looks to Sawan to supply that teaching. Thus, the Examiner contends that it would have been obvious to one of ordinary skill to have employed the binder and antimicrobial metal ion generating material disclosed by Yokozeki et al. to make a film substrate that can be ground down to form an antimicrobial powder suitable for use in antimicrobial creams.

Applicants' Arguments

Relying in part on the discussion presented in sections I, II, and III above, Applicants respectfully submit that the rejection based upon the combination of Yokozeki et al. in view of Ghosh and further in view of Sawan is improper, since (a) this combination fails to teach the source of the problem solved by Applicants' claimed invention, (b) there is no proper motivation provided for combining these references, and (c) this combination fails to teach each and every limitation of Applicants' claimed invention. Detailed discussion of the deficiencies of Yokozeki and Ghosh has already been provided. Applicants respectfully submit that Sawan et al. fail to provide for these deficiencies of Yokozeki and Ghosh. For instance, Sawan et al. fail provide a finish that retains at least about 50% after 10 washes according to the recited test method (see Declaration by David Green dated May 20, 2002).

As such, Applicants respectfully submit the combination of Yokozeki in view of Ghosh and further in view of Sawan fails to provide a *prima facie* case of obviousness and is therefore improper. Reconsideration and withdrawal of this rejection is respectfully requested.

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Conclusion:

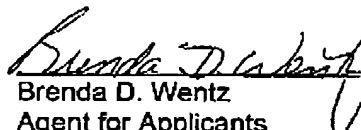
For the reasons set forth above, it is respectfully submitted that claims 29 – 48 stand in condition for allowance. Should any issues remain after consideration of these Remarks, the Examiner is invited and encouraged to telephone the undersigned in the hope that any such issue may be promptly and satisfactorily resolved.

In the event that there are additional fees associated with the submission of these papers (including extension of time fees), authorization is hereby provided to withdraw such fees from Deposit Account No. 04-0500.

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Respectfully submitted,

Milliken & Company
Legal Department, M-495
920 Milliken Road
PO Box 1926
Spartanburg, SC 29304


Brenda D. Wentz
Agent for Applicants
Registration No. 48,643
Telephone (864) 503-1597
Facsimile (864) 503-1999